



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,969	12/19/2001	Maciej Glowacki	10541/598	4858
29074	7590	01/23/2004	EXAMINER	
BRINKS HOFER GILSON & LIONE P.O. BOX 10395 CHICAGO, IL 60611			THOMPSON, KENNETH L	
			ART UNIT	PAPER NUMBER
			3679	

DATE MAILED: 01/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/024,969	GLOWACKI ET AL.	
	Examiner	Art Unit	
	Kenn Thompson	3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 October 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 2,3,5,6,9,12,14-17,20,21 and 26-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 2,3,5,6,9,12,14-17,20,26-29 and 32 is/are rejected.
- 7) Claim(s) 30 and 31 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 06 October 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Drawings

The drawings were received on 6 October 2003. These drawings are acceptable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 5, 6, 9, 12, 14-17, 20, 21 and 26-29 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brissette, U.S. 4,460,182 in view of Greenwald, U.S. 4,453,723.

Regarding claim 27, Brissette discloses in figures 1-9 a driveshaft (10). Brissette discloses a shaft (10) including a first (12) and second (14) members each having splined portions (28,34; col. 1, lines 38-40; square and hexagonal configurations include projections and slots fitted to enable torque transfer) and end portions (ends opposite universal joints 24 and 20). Brissette discloses the second member (14) being telescopically resident within the first member (12; col. 3, lines 3-5). Brissette discloses the splined portion (28) of the first member cooperating with the splined portion (34) of the second member thereby allowing the first and second members to cooperatively form the shaft (fig 1). Brissette discloses a seal (16) molded from a relatively soft compliant material (col. 2, lines 25-27), including an outer surface (generally indicated at 44), an inner surface, a bottom portion (generally at 56) and a top portion

(generally at 60). Brissette discloses the inner surface includes a first splined inner portion (62) having a first diameter, a second splined inner portion (50c) having a second diameter and an intermediate section (46,50). Brissette discloses the first diameter is larger than the second diameter. Brissette discloses the first splined inner portion and the second splined inner portion are substantially parallel with each other. Brissette discloses the first splined inner portion (62) is located proximal to the bottom portion and adapted to couple with the first member splined portion (12) and slidably fitted thereto. Brissette discloses the second splined inner portion (50c) is located proximal to the top portion and adapted to couple with the second splined portion (34) and slidably fitted thereto. Brissette discloses the intermediate section (46,50) is located between the first splined inner portion (62) and the second splined inner portion (50c) and adapted to couple the first member end portion (via the first splined inner portion). Brissette discloses a metal band bonded to (col. 1, lines 53-56) the first splined inner portion (62) of the seal (16) wherein the metal band radially biases the first splined inner portion of the seal to engagement with the splined portion of the first member. Brissette does not disclose a spring molded within the first inner portion to resiliently radially bias the first inner portion. Greenwald teaches in figure 13 use of a spring (22) molded within the first inner portion of the seal (10) to resiliently radially bias the first inner portion to compensate for gradual decreasing resilience of the seal (col. 1, lines 26-31). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the seal disclosed by Brissette to have a spring molded within the first inner portion to resiliently radially bias the first inner portion; as taught by Greenwald to compensate for gradual decreasing resilience of the seal thereby prolonging the useful life of the seal.

As to claims 2 and 16, Brissette discloses in figure 6 the seal is one piece.

As to claims 3 and 17, Brissette discloses the seal is any suitable material such as neoprene rubber (col. 3, lines 18-26). Brissette does not disclose plastic. However it would have been obvious to one having ordinary skill in the art at the time of the invention to arrange for the seal to be made from plastic since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

As to claim 5, Brissette discloses the first (12) and second members (14) have respective diameters (36,30) of approximately a same respective value. Brissette discloses each of the first (28) and second (34) respective splined portions have a respective length of about three times the value of the respective diameter of the first member (col. 1, lines 41-45).

As to claim 6, Brissette discloses the first and second splined inner portions (66,60) of the seal are fit around at least a part of the respective splined portions (28,34) of the first and second members utilizing preload force (col. 3, lines 43-46).

As to claim 9, Greenwald teaches in figure 13, use of a spring being a garter-ring

As to claim 12, Brissette discloses the first splined inner portion (66) of the seal is air-tightly fit around at least a part of the splined portion (28) of the first member (12); and the second splined inner portion (60) of the seal is air tightly fit around at least part of the splined portion (34) of the second member (14; col. 3, lines 43-46).

As to claims 14 and 21, Brissette discloses the first (12) and second (14) members of the shaft and the first and second splined inner portions of the seal are generally cylindrical (col. 1, lines 38-56; hexagonal is generally cylindrical).

Regarding claim 15, Brissette discloses a seal (16) for a double-tube splined shaft (10; col. 1, lines 38-40; square and hexagonal configurations include projections and slots fitted to

enable torque transfer). Brissette discloses the seal having a first splined inner portion (66) having a first diameter (generally indicated at 44) and a second splined inner portion (60) having a second diameter (generally indicated at 56). Brissette discloses the first and second splined inner portions (66,60) of the seal are each adapted to be slidably fitted around at least a part of the splined portions (34,28) of the respective tubes of a double-tube telescopically resident splined shaft. Brissette discloses a metal band bonded to the seal (16; col. 1, lines 53-56) proximate to the first splined inner portion (62) wherein the seal is molded from a relatively soft, compliant material (col. 2, lines 25-27) such that the metal band biases the first splined inner portion radially inwardly for engagement with the splined portions of the shaft. Brissette does not disclose a spring disposed within the seal to resiliently bias the first inner portion. Greenwald teaches in figure 13 use of a spring (22) disposed within the first inner portion of the seal (10) to resiliently radially bias the first inner portion to compensate for gradual decreasing resilience of the seal (col. 1, lines 26-31). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the seal disclosed by Brissette to have a spring disposed within it to resiliently bias the first inner portion; as taught by Greenwald to compensate for gradual decreasing resilience of the seal thereby prolonging the useful life of the seal.

As to claim 20, Brissette discloses a clamp (col. 1, lines 53-56) secured around one of the first and second splined inner portions (66,60) of the seal.

As to claim 26, Brissette discloses the first member (12) is adapted (via 20) to couple with a transmission of a vehicle, and second member (14) is adapted to couple (via (24) with a differential of the vehicle (col. 1, lines 13-20).

As to claim 28, Brissette discloses the second splined inner portion (60) is defined by an annular lip (56) located proximal to an axial end of the seal.

As to claim 29, Brissette discloses the annular lip is adjacent the first member (see figure 9; 60 is within the proximity of 12).

As to claim 32, Brissette discloses the first diameter if the first splined inner portion (62) of the seal is larger than the second diameter of the second splined inner portion (60) of the seal.

Allowable Subject Matter

Claims 30 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or suggest all the claimed subject matter including the first and second splined inner portions include inwardly projecting splines extending in axial direction along the inner surface of the seal.

Response to Arguments

Applicant's arguments with respect to claims 2, 3, 5, 6, 9, 12, 14-17, 20, 21 and 26-32 have been considered but are moot in view of the new grounds of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Otani, U.S. 6,394,463 discloses a similar seal.

Art Unit: 3679

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenn Thompson whose telephone number is 703 306-5760. The examiner can normally be reached on 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on 703 308-1159. The fax phone number for the organization where this application or proceeding is assigned is 703 872-9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-2168.


14 January 2004